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STRATEGIC PLANNING AND RESEARCH BRANCH
ALBERTA ECONOMIC DEVELOPMENT AND TRADE

MAR 22 1992

VOLUME 2, NUMBER 1
WINTER 1992

A LETTER FROM ALBERTA

Building links among researchers

Dear Readers:

The first issue of *Inside/Out* introduced you to our goal of building links among research and planning groups. Now, in the second issue, we're advancing our commitment by introducing an information exchange column to our publication.

The Investigations column will provide a list, a brief description and a contact for a few current research projects. The aim of providing this is to get researchers and planners with similar interest to contact the featured project's coordinator.

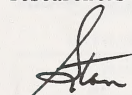
All too often, I find that research we are conducting is being planned, undertaken or even completed by another organization. And these occurrences are just the ones I spot through informal business contacts. Frankly, I would like to see these kinds of connections happen more frequently and earlier in a project's life.

While it is becoming increasingly more difficult to fund research projects, the need for quality results is growing. We can ill afford to use resources to complete a project and then slap our foreheads when we realize the office down the street, across the country or even around the world has completed the same task. At the very least we could share sources and warn each other of dead ends. Hopefully, duplication of efforts can be reduced and scarce resources can be shared.

We are aiming high with the Investigations column.

Whether we reach our target depends in part on you. A column like this cannot survive without input and, as we can only publish projects that are brought to our attention, we are depending on you for the input. If this works, we may need another idea to keep each other up to date on our resources which can be shared.

So please, join us in our effort to build links among researchers and planners.



Stan Schellenberger
Assistant Deputy Minister

FUTURES

Long-lived but valuable workforce

**To get better with age we will have to
accept some changes**

The tidal wave of an aging workforce is going to revolutionize the North American workplace in the next decade. Through the 1990s and beyond, older, or "mature" workers will form a growing portion of the labour force. In their wake will come immense challenges and opportunities, and a new, positive image of "aging".

The "greying" of the industrial world's population is no exception to Canada; in 1960, 7.6 percent of Canadians were 65 years of age and older. In 1986, 11 percent of the population were 65 years of age and older. By 2036, close to 25 percent of the population will be in this category.

Casual work-clothes

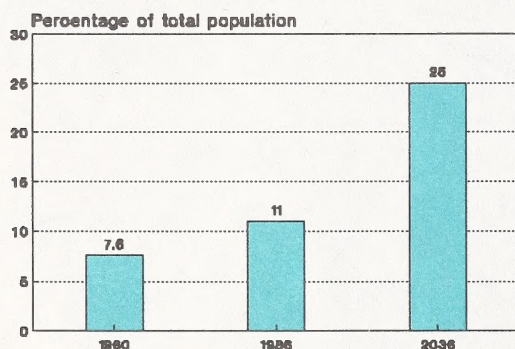
If a tidal wave of aging workers is converging on the beaches of North America you can be sure they won't be surfing ashore wearing blue pinstriped banker's suits and power ties. Casual dress is the style for offices these days.

According to a survey performed by athletic-shoe maker Converse Inc. 65 percent of women and 44 percent of men are relaxing their work-dress habits. Down is the incidence of a formal company dress code, and the occurrence of official casual dress days is on the rise. Jennifer Murray, of Converse, told *Entrepreneur* magazine (December, 1991) that casual dress days can improve morale and productivity.

The *Economist* newspaper has taken this trend further by predicting the demise of men's pants. In their place the fashion conscious executive will honour the Elizabethan era and sport tights.

This demographic trend is characterized by decreasing fertility rates and a shrinking entry-level workforce. Many policy-makers and businesses are concerned as to the possible economic and social implications of our aging society. Declining economic vitality, reduced geographic mobility of the labour force, rising healthcare costs and dwindling old age pensions are just some of the issues.

Canadians 65 years of age or older



However, for those concerned, there is a bright side to this negative scenario—the shift to an older population. According to Ken Dychtwald and Joe Flower, the authors of *Age Wave*, "With the coming of the Age Wave, we will learn to see our retirees as a vast and untapped resource, not as a drain."

As society becomes older, it will change the way we work and retire. Here is what the future senior-dominated labour market will portray:

- Retirement, as we now know it, will be redefined. For many former workers it will be a transition period from an old job or career to a new one—a pattern that could become more common in the years ahead.

- Demand for "wisdom workers" is on the rise. As post-industrial economies mature, more and more jobs are based on knowledge, experience, judgement, and fewer on physical capabilities. A recent study of workers in the United States by Days Inn of America and Travellers Corporation concluded that workers aged 50 or more learned to use computers and other new technology as quickly as their younger employees, and were often better sales persons.
- The purpose and arrangement of work in peoples' daily lives will change and will make a lifetime blend of work and leisure a real possibility. Employers are increasingly beginning to recognize the importance of flexible work arrangements in order to overcome skill shortages and recruiting and motivating talented people. Some of the changes taking place are part-time work, phased retirements, flexplace, flexitime, education, training, personal and educational sabbaticals. All of these changes will establish an entirely new approach to the lifetime distribution of work and leisure and lead to the emergence of a more balanced blend of work, leisure and education for the next several decades.

"With the coming of the Age Wave, we will learn to see our retirees as a vast and untapped resource, not as a drain."

Changing demographics, new technology, a global economy, and new demands on workers will bring sweeping changes to the workplace of the 1990s and beyond. Some trends already taking shape in today's world of work are in the form of consulting or contractual work, life-long learning and brain-power as opposed to muscle-power as we move away from a material-intensive economy to a knowledge-intensive economy.

All of these factors will make it conducive for the aged to participate longer in the workforce. Later life is rapidly becoming a time when one does not stop working completely, but rather shifts gears to part-time, seasonal or occasional work, mixed with productive and involved leisure activities.

INTERNATIONAL

The Australia Accord

Industry, labour and government shake hands and start over

Recession, double digit inflation, double digit unemployment, crippling labour disruptions, an inefficient and highly protected manufacturing industry... Things were not going well for Australia in 1983. A country with its major markets far away and an economy heavily reliant on primary products and natural resources, Australia still had this nasty problem of catching pneumonia when the rest of the world caught only a cold.

During a period of self examination, which began in the 1970s (The Jackson Committee, White Paper on Secondary Industry, White Paper on Manufacturing) there grew a national awareness of where the problems lay. It became obvious that past policies designed to correct chronic balance-of-payments deficits had resulted in industries being developed under a protectionist umbrella of import restrictions and export assistance. It was acknowledged that a lack of coordination and dialogue among industry, government, trade unions and academic circles had become the major hindrance to growth and international competition.

Indeed, it became clear the economic challenges facing Australia were structural and, in 1983, the newly elected government began implementing change. Thus began a program to fundamentally rework the social, economic and industrial fabric of the nation. The objective: raise living standards, improve export performance and build an economy that only shivers when the world catches a cold.

Termed "the Accord", this process has resulted in a redefining of the relationship between industry, government and labour. This social and economic contract has resulted in seven formalized agreements between organized labour and the federal government covering the breadth of government policy.

As a prices and incomes policy these agreements have dealt heavily with wages and social spending. But more so, these agreements have covered industrial change, workplace productivity and employee/employer contributions to pension payments. In addition, a whole range of supporting policies in education and training, social welfare and government administration have been developed.

It is nine years later and the economy has slid into recession and double digit unemployment is back. Will the Federal election due by March, 1993 continue or reverse the momentum of this social experiment? Like Australians, we will all have to wait and see.

Has the Accord failed? Well, despite the persistence of Australia's more intransigent economic woes, some things seem to be going right. Real wages have been maintained, inflation is under 4 percent, and taxes have been cut even though social spending has increased. The manufacturing industry is more efficient and less protected than before and improved relations between industry and

Despite the persistence of Australia's more intransigent economic woes, some things seem to be going right.

labour have seen industrial disputes fall by 60 percent. A national health insurance system has been introduced and the education and training system has been radically restructured. Since 1983, real household disposable income per capita has risen 7.6 percent and Australia has moved from sixteenth to fourth position among the 24 OECD countries in terms of economic growth.

In 1987, Australia's 3.1 million trade unionists belonged to 326 separate unions. Today, they belong to 270 unions. The goal is to further rationalize these unions into 20 industry groupings. This will allow longer term industry planning and cooperative agreements as well as more strength and resources for trade unions.

There can be little doubt that Australia has made great strides in diagnosing and treating its problems. Today, they have much to show for their efforts. However, serious problems persist, and only the first steps towards world competitiveness have been taken. The Accord has not been the answer to all of their problems but is has been a framework which has encouraged constructive change and innovation.

Defining competitiveness

Last issue we discussed the need for a definition; now for the hard bit.

"'International competitiveness.' Business people use that phrase a lot in their conversations, speeches and writings. In doing this, we seldom elaborate on what we specifically mean by the term, why it is important or for what we are competing"; this from Ronald Morrison, President of Kodak Canada. The luxury of using poorly defined term is that it can be called upon to explain any occurrence and justify any cause. This is a frill we cannot afford as the scourge of using badly defined term is that understanding and agreed action are rarely achieved.

Most of the current writings on competitiveness in Canada assume that the term is well defined and understood. Others use one of two well accepted views. The first of these is from the *World Competitiveness Report*. They define competitiveness as "the ability of entrepreneurs to design, produce, and market goods and services, the price and non-price characteristics of which form a more attractive package than those of competitors." The other definition is called the *standard of living competitiveness*. "Competitiveness is the degree to which a nation can, under free and fair market conditions, produce goods and services that meet the test of international markets while simultaneously maintaining or expanding the real income of its citizens." This is from the United States' President's Commission on Industrial Competitiveness (*Global Competition, The New Reality, 1985*).

The key to both these definitions is that they are rooted in the characteristics of the product. The President's Commission goes further to link products with a country's standard of living. Yet they are still trying to find a stand alone definition for the competitiveness of a nation. Not only is this a difficult task, it clouds the issue. Nations don't actually compete on international markets—firms do. And businesses win or lose the competition depending on the reception their products get from consumers.

To make these distinctions it is helpful to partition the definition of competitiveness into their dependent parts:

- the competitiveness of a product,
- the competitiveness of a firm, and
- the competitiveness of the economy.

Product competitiveness is ultimately determined by consumer choices. The price of the goods or service, the quality provided and the reputation the firm has for providing value for money are the characteristics that sway a consumer's choice among similar products. National origin of the product matters only to the extent that it affects the product's reputation.

The competitiveness of a firm is determined by the firm's ability to produce competitive products. That sounds glib but it correctly states the relationship. A firm will be able to provide these products if its productivity is in line with its competitors'.

Productivity, like competitiveness, is often misunderstood. It compares the value of what is put into a process to the value of what comes out. It is a measure of how efficiently the inputs (labour, management, machines, energy and raw materials) of a good or service are used.

Often "low cost" is mistaken for "high productivity." Cost is only one side of the productivity equation. The payment made by a firm for any of the inputs need not match the payments made by a competitor for the same input. For example, if Canada's labour productivity is higher than Mexico's (and it is by a huge margin) then Canadian businesses will have to pay more for labour than Mexicans because they are getting more output per worker.

To increase productivity firms must excel in two areas. First, they must be innovative in the products they make; effective marketing keeps product lines in touch with consumer wants. Second, they must be innovative in the processes they use to make products; investment in labour force training, better machines, new technologies and product quality allows firms to make adjustment to changing consumer wants.

The economy's competitiveness is linked back one level to the firm, just as the firm is linked back to the product. The economy is competitive if the firms in it have the ability to continually increase their productivity in line with their global competitors without relying on continual direct government aid to do so. It is usually at this level that many people join the competitiveness debate in a search for how government hinders competition and how it can fix all our woes.

Government involvement is always a sticking point in competitiveness discussions, so some clarification is necessary here. When a firm's product stops selling the market is sending a signal to the firm's managers. Through their marketing skills, the managers can receive,

interpret and adjust to the message. Or they can appeal to the government to mitigate the effects of the message by employing tariffs, export subsidies, production subsidies and other such bail-outs. While a helping hand can work for a short time, we cannot continue forever (our trading partners will not stand for subsidies and our budget cannot finance them). So at some point the firm will have to adjust to the market independent of direct government aid.

Though government cannot provide a magic solution, there are a myriad of ways government can impact the economy's competitiveness. Fortunately, most of them fall into four groups: education, tax policy, spending, and regulation. And within these four groups only those actions that have an impact on productivity count. Since this is the level of competitiveness that draws the most heat, more detail on each of these groups is warranted.

An important area where the government can impact competitiveness is in the provision of a high quality education system. As firms adjust to consumer demands, so too must labour. Adjustment makes the ability to learn the worker's most valuable skill. Government can ensure that kindergarten through grade 12 education teaches the skill of learning. It can also coordinate private sector training needs with the services offered by our colleges and universities. Education leads to labour productivity growth which allows for high wages and the production of more competitive products.

Tax policy can affect competitiveness through encouraging or discouraging certain activities that influence productivity. A tax system that rewards labour training, equipment investment and research and development will have a positive effect on competitiveness. Note: tax competitiveness does not mean that a government must strive to have the absolute lowest taxes among all jurisdictions, just that taxation cannot discourage firms from investing in productivity improvements.

Governments tax so they can provide services to their citizens. Spending on social programs is often attacked as an impediment to competitiveness. Be careful of this stereotype. Some social programs enhance productivity (like education), others serve to attract and retain skilled labour (like health care and parks) and others that reduce productivity (like welfare payments) should be judged from a moral standpoint as much as an economic one. Business assistance programs are not all beneficial to our competitiveness either; some are in fact designed to shield firms from competitive forces—interprovincial trade barriers for instance.

A key issue with respect to spending is the amount of it. Government debts are simply taxes deferred; a trade-off, extra programs for the same taxes today in exchange for higher taxes (or fewer programs) tomorrow. This trade-off is not costless either. Public debt competes for investment money: a.k.a. higher interest rates.

Regulation is also a much maligned product of government. Again be cautious of the stereotype. Not all regulations reduce productivity. Reforestation requirements, for example, protect the very long-run productivity of the forest products industry. Other regulations are competitive requirements, not impediments. Product safety standards and environmental controls are items that consumers are demanding of products. The regulated standards in these regards add little to the expenditures that firms have to make to meet consumer demands. The real productivity drain of regulations (particularly environmental ones) is the number of protracted review processes and the uncertainty caused by fuzzy standards.

We now have the background needed to state our definition.

- **Competitiveness is determined by consumers when they select from among similar products the product that has price and non-price characteristics superior to the rest.**
- **Firms are competitive if their productivity is high enough to enable them to make products that consumers will select.**
- **And the economy is competitive if firms in it are able to increase their productivity, along with their competitors, without relying on continual direct government assistance.**

Many factors can have a direct effect on competitiveness. Some governments will be able to influence, but others are beyond their control. The distinction between these two groups is important. We must effectively manage the factors that we can control, and monitor and adjust to the ones we cannot. Government can oversee the four areas where its actions have a direct impact on competitiveness: education, taxation, spending and regulation. Add to this list attitude toward competitiveness. Attitude can not be directly set, but government can influence it through awareness; by dispelling myths regarding our competitive position and how to change it. Together these areas form the controls with which to guide our competitive position.

Environmental Opportunities In Asian Countries

In the second of our two part Asian environmental opportunities survey we review Hong Kong and Taiwan.

Until the past decade Hong Kong and Taiwan have not been worried about environmental pollution problems. There were three reasons for their apathy: 1) no money to install and enforce environmental protection measures; 2) large scale industry has only recently evolved; and 3) the two countries' geographic locations as coastal or island nations have allowed them to float their problems away. Now the tide has turned and the garbage is washing ashore.

Hong Kong is a vibrant growing city state of 6 million people crowded onto a mountainous peninsula and island on the southwest coast of China. Complicating the city's existence is its difficult political status. Technically the city is part of the Peoples Republic of China (PRC), but late in the last century the United Kingdom obtained a 99 year lease on the area to use as a trading port. The lease is due to expire in 1997, after which Hong Kong reverts to PRC control. This fact complicates Hong Kong's ability to remain progressive in its movement towards a cleaner environment. It is unclear whether the PRC will allow Hong Kong to remain on its path.

Hong Kong generates 25,000 tonnes of waste each day - which is comparable to cities of this size elsewhere in the world. The problem facing the city is its growing affluence. Waste generation has increased 300 percent over the past 15 years and will continue on this curve as the city grows even wealthier.

To confront the problem, Hong Kong, starting in 1989, launched a 10 year C\$3 billion action plan entitled "Pollution in Hong Kong—A Time to Act." The plan has a multi-dimensional approach covering legislation, enforcement and infrastructure development. The city will literally start to clean up beginning with stopping illegal dumping of garbage, sewage and industrial waste in the area streams and waters. Construction of additional sewage and industrial waste treatment facilities, and storm water run-off systems will curtail much of their non-commercial pollution.

Taiwan is an island nation of 20 million people located off the south of China, comprising an area just a little larger

than Belgium. Fortunately for Taiwan, but not for the environment, the island has relied on the eco-system to flush most of its pollution problems out to sea or to let the prevailing winds eventually blow them away. But Taiwan now generates too much solid waste and airborne contaminants to continue this practice; its self cleaning mechanism does not work as fast as the economy piles up the garbage.

To combat this deteriorating situation, Taiwan has committed C\$11 billion to environmental protection projects. In the "Six Year National Development Plan for Taiwan (Republic of China) 1991-1996" a total of 67 environmental projects are proposed. Included are a variety of initiatives from air, water, and sewage, to industrial pollution projects throughout the country.

Both Hong Kong and Taiwan have environmental problems and through a combined C\$14 billion clean-up project, they have demonstrated a will to fix their problems. But the will is not enough. Both nations have environmental protection industries with limited abilities, so they will have to look abroad for expertise and technology. This is an opportunity we should not miss.

NEW PRODUCTS

From time to time we will be bringing you news of some of the more interesting products that have been recently developed in Alberta. This issue we have snug limbs.

Walking freely

A laser fitted artificial limb

Mr. George Clynych, prosthesis, and Dr. Jack Engsberg, biomechanics professor at the University of Calgary have perfected the art of fitting a prosthesis into a science.

This new computer-aided-design/computer-aided-manufacturing (CAD/CAM) system uses a laser scanner to pick up the thousands of measurements required to give prosthesis wearers more comfort, in less time, and at a lower cost. The laser measurement information is fed into a 3-D computer picture. The end result is fed into a milling machine which produces the mould for the socket. So far, 20 amputees are using a prototype prosthesis made with this technology.

More information is available from Clynych Technologies Inc., #3 - 4703 Bowness Road N.W., Calgary, Alberta, Canada, T3B 0B5, telephone (403) 247-2755.

INVESTIGATIONS

Alberta Agriculture

Agriculture Research Information System (AGRIS):

The Research Division of Alberta Agriculture operates AGRIS, an electronic bulletin board with over one thousand research titles and abstracts. The system is a collection of the research conducted and funded by Alberta Agriculture over the last twelve years. The bulletin board can be accessed by the dataline at (403) 438-2209, or contact the Alberta Agriculture Research Division at (403) 427-1956.

"Research Report" Newsletter:

The newsletter of Alberta Agriculture is released three to six times a year on a demand basis. The "Research Report" provides progress reports on the On-Farm Demonstration and Farming for the Future Projects, along with other articles of interest. This publication is available on request. For further information on these programs contact Mr. Kent Racker, Research Officer, at Alberta Agriculture Research Division, (403) 427-1956.

University of Alberta

Sustainable Development:

Economics and rural economy Professor Terry Veeman is conducting research into the policy applications of sustainable development. Dr. Veeman has identified and is concentrating his research on the essential components of: growth, distribution and environment. These components, he hopes, will clarify the issues of the complex concept of sustainable development and simplify the decision making process (University of Alberta Spectrum, Fall '91). Contact the Department of Rural Economy at (403) 492-4225.

Land Reclamation:

For Eric Higgs, professor in the Faculty of Art's Science, Technology and Society Program (now in formation), land reclamation was a natural pursuit. His work in the philosophy of technology and his environmental interests, focus in the process of land reclamation. Dr. Higgs

suggests that reclamation is a mix of culture, technology and creativity. Acknowledging that land reclamation has reached a high level of sophistication, Dr. Higgs' ultimate goal is to publish a book that will address what constitutes good ecological restoration. Contact the Department of Philosophy at (403) 492-3307.

Alberta Tourism

Alberta Travel Surveys

Available in early 1992, the non-resident travel exit survey measures visitor travel to Alberta during the period January 1 - December 31, 1990. Interviews were conducted with 18,400 people. This allowed the recording of qualitative as well as quantitative data.

Available in mid 1992, the Alberta resident travel survey measures travel by Alberta residents inside and outside of the province. The survey covers the period January 1 - December 31, 1991 and includes data from 18,000 interviews with travellers. Both surveys were conducted by Gallop Canada Inc. For more information on these two studies contact Mr. Fred McMullan, Manager Research and Analysis, Strategic Planning Branch, Department of Tourism, 6th Floor, CityCentre, 10155 - 102 Street, Edmonton, Alberta, Canada, T5J 4L6, telephone (403) 427-4322.

Alberta Economic Development and Trade

Globalization Report:

This is an in-house publication that examines the phenomenon of the globalization of industry. This document follows the evolution of the world economy to the global village, where industries compete on a global scale. For more information contact Mr. David Kettles, Acting Director of Strategy Development, Strategic Planning and Research, Alberta Economic Development and Trade, 9th Floor, Sterling Place, 9940 - 106 Street, Edmonton, Alberta T5K 2P6, Canada, telephone (403) 427-0741.

OECD forecasts

The Organization for Economic Cooperation and Development (OECD) released "OECD Economic Outlook No. 50" in December. The Paris based organization is optimistic about most national economies; the sub-title of the report was "The Path to Recovery."

Though uncertainty is clouding the strength of recoveries in Canada and the United States, the OECD believes that long term forces for moderate growth are in place. Business and consumer confidence are low, but they should succumb to the attraction of lower interest rates world wide and the pull of more efficient business environments. These forces, combined with shallowness of the recent recession, put most OECD economies on solid ground by the end of 1992.

| | Growth of real GDP/GNP | | | Inflation | | | Interest Rates | | | Unemployment | | |
|----------------|------------------------|------|------|-----------|------|------|----------------|------|------|--------------|------|------|
| | 1991 | 1992 | 1993 | 1991 | 1992 | 1993 | 1991 | 1992 | 1993 | 1991 | 1992 | 1993 |
| United States | -0.5 | 2.2 | 3.8 | 3.8 | 3.0 | 2.9 | 5.4 | 4.5 | 4.9 | 6.7 | 6.7 | 6.1 |
| Japan | 4.5 | 2.4 | 3.5 | 2.2 | 2.1 | 1.9 | 7.2 | 5.8 | 6.0 | 2.2 | 2.3 | 2.3 |
| Germany | 3.2 | 1.8 | 2.5 | 4.4 | 4.5 | 3.9 | 9.2 | 9.1 | 8.4 | 4.6 | 5.0 | 5.1 |
| France | 1.4 | 2.1 | 2.7 | 2.8 | 3.0 | 2.7 | 9.5 | 9.1 | 8.3 | 9.4 | 10.1 | 10.2 |
| Italy | 1.0 | 2.0 | 2.5 | 7.1 | 5.8 | 5.2 | 12.0 | 11.2 | 10.4 | 10.9 | 10.8 | 10.7 |
| United Kingdom | -1.9 | 2.2 | 3.2 | 6.2 | 4.2 | 3.7 | 11.5 | 10.2 | 8.9 | 8.7 | 9.9 | 9.7 |
| Canada | -1.1 | 3.1 | 4.1 | 3.6 | 2.8 | 2.2 | 9.1 | 7.5 | 6.9 | 10.3 | 10.2 | 9.8 |
| Total OECD | 1.1 | 2.2 | 3.3 | 4.2 | 3.7 | 3.3 | n.a. | n.a. | n.a. | 7.1 | 7.4 | 7.1 |

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The statements in this publication are not necessarily those of the Government of Alberta or any of its ministers, and the Government of Alberta accepts no responsibility for them.

Inside/Out is published quarterly. All opinions, comments and submissions for publication are welcome.

ISSN 1188-259X

